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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/659,844	09/11/2000	Robert M. Ames	82,631	5614

7590 11/12/2004

Office of Counsel Code 004
Naval Surface Warfare Center
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West Bethesda, MD 20817-5700

EXAMINER

BARNES, CRYSTAL J

ART UNIT

PAPER NUMBER

2121

DATE MAILED: 11/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/659,844

Applicant(s)

AMES ET AL.

Examiner

Crystal J. Barnes

Art Unit

2121

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 August 2004.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
4a) Of the above claim(s) 4-7 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-3 and 8-15 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 27 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 27 August 2004.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The following is a Final Office Action in response to Amendment received on 27 August 2004. Claims 1-3 have been amended. Claims 4-7 have been cancelled. Claims 8-15 have been added. Claims 1-3 and 8-15 are now pending in this application.

Oath/Declaration

2. The requirement of a new oath/declaration is withdrawn. The oath/declaration is not defective.

Drawings

3. The formal drawings were received on 27 August 2004. These corrections are acceptable.

Specification

4. The amendment to the specification was received on 27 August 2004. These corrections are acceptable.

5. The disclosure is objected to because of the following informalities: "a connector of type surface 45" on page 2 line 7 from bottom of the amendment to the specification should be "a connector of type surface 46" as shown in figure 17. Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1, 10 and 13-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Claim 1, last 2 lines, the phrase "a common and unique base geometry" is contradictory and indefinite. Is the base geometry common or unique? It cannot be both common and unique.

9. Claim 10, last 2 lines, the phrase "the exclusion of those having the interrelated boundary elements thereof intersecting" is unclear. What are excluded and have intersecting interrelated boundary elements?

10. In claims 13-15, the first wherein clause makes selection of geometric data entities sound optional whereas the last set of clauses defining the geometric data entities makes the geometric data entities sound required. It is unclear whether selection of all the geometric data entities in the group is optional or required for instantiation?

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. Claims 1-3 and 8-12 are rejected under 35 U.S.C. 102(b) as being anticipated by USPN 5,581,672 to Letcher, Jr.

As per claim 1, the Letcher, Jr. reference discloses a process for geometrical modeling of a physical body having physical surface portions, including the steps of establishing multiple topological views (see column 8 lines 16-20, "appropriate views") respectively representing said physical surface portions (see column 8 lines 27-34, "objects" and column 14 lines 17-23, "surfaces") of the physical body (see column 14 lines 22-23, "30-foot sailing yacht") through use of inner and outer boundaries (see column 7 lines 26-39, "common edges, boundary curves"); associating unique properties (see column 8 lines 36-49, "attributes") and analysis (see column 14 lines 60-63, "transformed") of said physical body ("30-foot sailing yacht") with said topological views ("appropriate views") including an interconnection (see column 61-64, "durable connection") between the physical surface portions ("objects, surfaces"); and mapping (see column 8 lines 61-65 and column 9 lines 1-5, 8-12, "mapped") said multiple topological views ("appropriate views") to a common and unique base geometry (see column 14 lines 60-63, "coordinates of absolute points") of the physical body ("30-foot sailing yacht").

As per claim 2, the Letcher, Jr. reference discloses said topological views overlap (see column 11 lines 10-13 and 26-28, "object dependent on surface object") to form said interconnection ("durable connection") between the physical

surface portions ("objects, surfaces") within a parametric domain of said base geometry ("coordinates of absolute points") defining physical space (see column 3 lines 62-64, "design space") of said physical body ("30-foot sailing yacht").

As per claim 3, the Letcher, Jr. reference discloses including a step for connecting boundary elements (see column 7 lines 26-39, "defining adjoining edges") of said topological views ("appropriate views") to establish said interconnection ("durable connection") between the physical surface portions ("objects, surfaces").

As per claim 8, the Letcher, Jr. reference discloses said physical surface portions ("objects, surfaces") are intersecting curved surface objects (see column 9 lines 36-38, "curve") interconnected (see column 6 lines 61-63, "any curve may depend on another curve") along said intersection (see column 7 lines 28-31, "boundary curves").

As per claim 9, the Letcher, Jr. et al. reference discloses said physical surface portions ("objects, surfaces") are solid volume objects (see column 5 lines 14-19, "parametric solids") connected to each other along said interconnection ("durable connection").

As per claim 12, the Letcher, Jr. reference discloses said physical surface portions ("objects, surfaces") of the structural product ("30-foot sailing yacht") are solid volume objects ("parametric solids") having the interrelated boundary elements (see column 7 lines 28-34, "boundary curves, common endpoints") on a common connector surface (see column 7 lines 26-28, "durable common edges between surfaces").

As per claim 10, the Letcher, Jr. reference discloses a process for computer-aided geometric modeling of a structural product, comprising the steps of: plotting topological views (see column 8 lines 16-20, "appropriate views") of physical surface portions (see column 8 lines 27-34, "objects" and column 14 lines 17-23, "surfaces") of the physical product (see column 14 lines 22-23, "30-foot sailing yacht") having boundary elements (see column 7 lines 26-39, "common edges, boundary curves") interrelated by connectors ("adjoining edges"); and mapping (see column 8 lines 61-65 and column 9 lines 1-5, 8-12, "mapped") said topological views ("appropriate views") of the physical surface portions ("objects, surfaces") to the exclusion of those having the interrelated boundary elements thereof intersecting.

As per claim 11, the Letcher, Jr. reference discloses said physical surface portions ("objects, surfaces") of the structural product ("30-foot sailing yacht")

are curved surface objects (see column 9 lines 36-38, "curve") interrelated by intersection (see column 6 lines 61-63, "any curve may depend on another curve") along the intersecting boundary elements ("common edges, boundary curves").

Allowable Subject Matter

13. The following is a statement of reasons for the indication of allowable subject matter:

As per claim 13, the prior art of record taken alone or in combination fails to teach defining by instantiation a geometric data entity, wherein each of geometric data entity is selected from a group consisting of at least one Cartesian location, at least one Ppoint entity, at least one Pcurve entity, at least one Edge entity, at least one CoEdge entity, at least one CoPoint entity, at least one EdgeLoop entity, at least one Surface entity, at least one Face entity, at least one OrientedClosedShell entity and at least one Solid entity; and defining an overlapping of at least two EdgeLoop boundaries sharing said Surface entity.

As per claim 14, the prior art of record taken alone or in combination fails to teach defining by instantiation a geometric data entity, wherein each of said geometric data entity is selected from a group consisting of at least one Cartesian

location, at least one Ppoint entity, at least one Pcurve entity, at least one Edge entity, at least one CoEdge entity, at least one CoPoint entity, at least one EdgeLoop entity, at least one Surface entity, at least one Face entity, at least one OrientedClosedShell entity and at least one Solid entity; and defining a sharing of an Edge entity by 2 or more EdgeLoop entities sharing said Surface entity.

As per claims 15, the prior art of record taken alone or in combination fails to teach defining by instantiation a geometric data entity, wherein each of said geometric data entity is selected from a group consisting of at least one Cartesian location, at least one Ppoint entity, at least one Pcurve entity, at least one Edge entity, at least one CoEdge entity, and at least one CoPoint entity; and said CoEdge entity contains a single n-dimensional function that contains the domain space of each Edge entity as a range coefficient of CoEdge function.

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

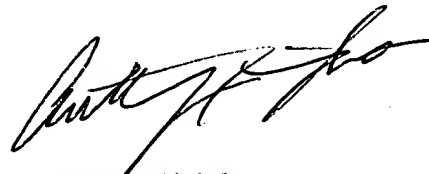
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Crystal J. Barnes whose telephone number is 571.272.3679. The examiner can normally be reached on Monday-Friday alternate Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Knight can be reached on 571.272.3687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CJB
4 November 2004



Anthony Knight
Supervisory Patent Examiner
Group 3600